

Borehole

22-06-01

Log Event A

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**Borehole Information**

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Farm : <u>BY</u>	Tank : <u>BY-106</u>	Site Number : <u>299-E33-112</u>
N-Coord : <u>46,140</u>	W-Coord : <u>53,327</u>	TOC Elevation : <u>647.36</u>
Water Level, ft :	Date Drilled : <u>8/3/1970</u>	

**Casing Record**

Type : <u>Steel-welded</u>	Thickness : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>100</u>	

**Borehole Notes:**

The borehole was drilled with a cable tool drilling rig, and the casing is apparently ungrouted and unperforated.

The drilling log noted that no detectable activity was encountered during drilling.

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**Equipment Information**

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Logging System : <u>2</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>03/1995</u>	Calibration Reference : <u>GJPO-HAN-1</u>	Logging Procedure : <u>P-GJPO-1783</u>

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**Log Run Information**

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Log Run Number : <u>1</u>	Log Run Date : <u>8/10/1995</u>	Logging Engineer: <u>Mike Widdop</u>
Start Depth, ft.: <u>98.5</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>0.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>



Spectral Gamma-Ray Borehole  
Log Data Report

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### Analysis Information

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Analyst : D.C. Stromswold

Data Processing Reference : P-GJPO-1787

Analysis Date : 2/8/1996

#### Analysis Notes :

The verification spectrum collected before the log run showed that the logging tool was operating properly. The verification spectrum collected after the run was performed near tank BY-104, where the surface Cs-137 was very high. The high Cs-137 perturbed the spectrum, making comparison with the verification spectrum collected before the log run difficult.

Gain drift was minimal during data acquisition, enabling a single energy calibration to be used during data processing.

The absence of any repeat logging precluded evaluating the repeatability.

Correction factors for 0.33-in.-thick steel casing were used during data processing, because correction factors for 0.31-in. casing were not available. As a result, the calculated concentrations will be slightly high. No water correction was applied because the borehole was dry.

Cs-137 and Co-60 were the man-made contaminants detected in this borehole. Cs-137 occurred almost continuously from the surface to total depth (TD). The maximum measured concentration was about 30 pCi/g near the surface, and the concentrations were less than about 1 pCi/g at most lower depths. Co-60 was located mainly near 47 and 60 ft. Co-60 concentrations were less than about 1 pCi/g.

K-40 concentrations increased below about 46 ft, which is near the tank's bottom.

See the Tank Summary Data Report for tank BY-106 for additional log analysis.

#### Log Plot Notes:

Separate log plots show the man-made (e.g., Cs-137) and the naturally occurring radionuclides (K-40, U-238, and Th-232). The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

A combination plot includes both the man-made and natural radionuclides, in addition to the total gamma derived from the spectral data and the Westinghouse Hanford Company (WHC) Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data from WHC with no attempt to adjust the depths to coincide with the SGLS data.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detection level (MDL). The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.